A PROTOCOL FOR A SELF-ORGANIZING NETWORK USING A LOGICAL SPANNING TREE BACKBONE

ABSTRACT OF THE DISCLOSURE under 37 C.F.R. §1.72(b)

A network protocol for low-cost, low-power devices coupled to a self-organizing wireless network using a spanning tree backbone architecture is described. In this protocol, physical and logical network construction and maintenance operations, which supports efficient data routing in the network, are performed. The construction phase in conjunction with the maintenance phase insures the self-organizing capability of the network. At the same time, the maintenance operations provide a self-healing mechanism so that the network can recover from node failures and a self-updating mechanism so that the network can expand as more nodes enter the system. Also, the logical backbone hierarchy will facilitate multi-hop communication. The construction of a logical layered spanning tree backbone architecture from an underlying physical topology allows seamless data communication routing between all nodes in the network.